Appendix I: Biological Opinion Excerpt, Formal Consultation Comments

SR 87 New Connector Road
Federal Highway Administration
Florida Department of Transportation
Santa Rosa County, Florida

Biological Opinion
FWS No. 2013-F-0159
December 20, 2013

Excerpt

Prepared by:
U.S. Fish and Wildlife Service
1601 Balboa Avenue
Panama City, FL

most RFS movements are within 1,500 feet of breeding ponds, the RFS cannot readily access other locations for feeding. Bridging should greatly reduce effects to the RFS and its habitat by avoiding extensive soil compaction and paving. We expect the effects of sedimentation and contamination to be greatly reduced through the use of stormwater ponds outside of RFS habitat and an effective erosion control plan.

Effects to Reticulated Flatwoods Salamander Critical Habitat

The proposed action has the potential to affect the following PCEs of Critical Habitat Unit RFS-2, Subunit A: 1. breeding habitat; 2. non-breeding habitat; and 3. dispersal habitat. Impacts to all habitat types could occur directly from sedimentation, soil compaction, contamination, shading; and fire suppression; however, any impacts will be greatly reduced through the use of bridging, avoiding the known RFS breeding pond and higher quality uplands, treating stormwater off-site, and implementing an effective erosion control plan. Impacts to the potential breeding pond (Pond 2) are expected to diminish the pond's overall quality but not to completely eliminate its function. Within the unit, permanent impacts from the bridge supports will result in a loss of 0.06 ac or 0.03% of critical habitat in the Action Area; approximately 8.3 ac of critical habitat (5% of Unit RFS-2, Subunit A, and 0.19% of all critical habitat) will be traversed by the footprint of the alignment and degraded both directly and indirectly by construction activities and the continued presence of the bridge.

4.4 Interrelated and Interdependent Actions

Along with the effects of the action, we must consider the effects of other federal activities that are interrelated to, or interdependent with, the proposed action (50 CFR sect. 402.02). Interrelated actions are part of a larger action and depend on the larger action for their justification. Interdependent actions have no independent utility apart from the proposed action. At this time, the Service is unaware of actions that satisfy the definitions of interrelated and interdependent actions that will not themselves undergo section 7 in the future, or that are not already included in the Baseline.

5.0 CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, Tribal, local or private actions that are reasonably certain to occur in the Action Area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. The Service is not aware of any specific plans within the Action Area that would not be covered under section 7.

6.0 CONCLUSION

Gulf Sturgeon

Our analysis indicates that the proposed project would have a negative, but not appreciable effect on the survival and recovery of Gulf sturgeon. Most direct and indirect effects will occur within the radius of underwater noise that will be created by pile driving and the downstream distance

associated with potential erosion control failures; however, overall the effects are considered small, temporary and reversible. Given that the subpopulation of Gulf sturgeon in the Yellow River (including the Blackwater River) is stable or increasing, the probability of species extinction is low. In addition, the proposed project is not likely to appreciably diminish the critical habitat's capability to provide the intended conservation role for the Gulf sturgeon. The nature of effects to critical habitat is relatively small, dynamic, and should not produce permanent alterations to any PCE.

After reviewing the current status of the Gulf sturgeon, the environmental baseline for the Action Area, the effects of the action, and the cumulative effects, it is the Service's biological opinion that the proposed new SR 87 Connector Road and construction of a new two-lane bridge is not likely to jeopardize the continued existence of the Gulf sturgeon or destroy or adversely modify its designated critical habitat.

Reticulated Flatwoods Salamander

Our analysis indicates that the proposed project would have a negative, but not appreciable effect on the survival and recovery of the reticulated flatwoods salamander. Most impacts will be short-term and temporary but there will be some permanent loss of habitat. The placement of piling bridge supports will result in the loss of 0.06 ac of habitat. Some indirect effects (shading, fire suppression, contaminant source) will be small but continual due to the long-term presence of the roadway. Up to 5% of the critical habitat in the unit will experience some degree of long-term impact. Effects are limited to an area with existing impacts from a powerline easement and unimproved roadway. None of the impacts are expected to alter the unit's PCEs to such an extent that the conservation role of the critical habitat to support a viable core population is appreciably diminished.

After reviewing the current status of the reticulated flatwoods salamander, the environmental baseline for the Action Area, the effects of the action, and the cumulative effects, it is the Service's biological opinion that the proposed new SR 87 Connector Road and construction of a new two-lane bridge is not likely to jeopardize the continued existence of the flatwoods salamander or destroy or adversely modify its designated critical habitat.

This opinion will apply for 5 years; after 5 years a re-evaluation of this opinion is required to address potential changes in the species' status. This re-evaluation is expected to take place at the beginning of the ROW phase.

7.0 INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulations pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to

listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering [50 CFS §17.3]. Incidental take is defined as take that is incidental to, and not the purpose of, an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary, and must be undertaken by FDOT so that they become binding conditions of any contract, grant or permit issued by the FHWA, as appropriate, for the exemption in section 7(o)(2) to apply. FHWA and FDOT have a continuing duty to regulate the activity covered by this incidental take statement. If FHWA and FDOT: (1) fail to assume and implement the terms and conditions or, (2) fail to require any contracted group to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, FHWA and FDOT must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement. [50 CFR §402.14(I)(3)]

7.1 Amount Or Extent Of Take Anticipated

Gulf Sturgeon

Incidental take is expected to be in the form of temporary direct and indirect impacts resulting from construction activities, elevated noise levels, impaired water quality, and habitat degradation. While injury or mortality of individuals is possible, the risk will be reduced by the use of environmentally-sensitive bridge construction techniques, and conservation measures that minimize impacts of pile driving noise, erosion, and ground disturbance. As described above (Effects of the Action), we cannot quantify the total number of individuals that may be directly or indirectly affected by the proposed action because it depends on the number of individuals in the area of impact, which varies widely based on time of year and habitat condition. Therefore, take cannot be accurately quantified as the number of individual Gulf sturgeon that are reasonably certain to be harassed, injured or killed by construction activities (other than boat strikes), or indirectly impacted through habitat degradation. We instead consider take in terms of habitat as follows:

1. *Pile Driving*: Take will occur in the area affected by the radius of underwater noise that will be created by impact pile driving, which is approximately from 600 feet upstream to 1,200 feet downstream beyond the 200-foot bridge work area. This includes behavioral disturbance, or auditory effects due to impulse sound from impact driving when the dB_{RMS} sound pressure level exceeds 150 re 1 μPa^2 but is below the threshold for physical injury. We do not anticipate take of more than one fish mortality will occur within this area as a result of boat or equipment strikes associated with in-river construction.

2. *Reduced Water Quality*: Take caused by reduced water quality due to construction activities and stormwater is reasonably certain to occur from the bridge crossing to the downstream extent of the Action Area. The best available indicators for the extent of

take due to reduced water quality are evidence of turbidity released during construction. This variable is proportional to the amount of construction-related disturbance of upland and stream channel habitats that results in an erosion and suspended sediment in runoff and the water column. We anticipate that these effects should not result in visible deposition of new sediment more than 1,312 feet (400 meters) downstream from the limits of construction.

Thus, combining the extent of take from 1 and 2 above, Gulf sturgeon take in the form of physical harm, mortality, or harassment is expected to include the following linear measurement of habitat in the Blackwater River: 600 feet upstream of the ROW; the 200-foot ROW; and 1,312 feet downstream of the ROW. Table 3 summarizes expected take below. The Service concludes that the incidental take of Gulf sturgeon will be considered to be exceeded if there is more than one fish mortality and if visible evidence of new sediment deposition from the project occurs more than 1,312 ft downstream.

Reticulated Flatwoods Salamander

The Service anticipates that incidental take (harm, harass, kill) is expected as a result of the construction activities within the footprint of the 200-foot ROW. While injury or mortality of individuals is possible, the risk is reduced by locating the alignment outside of the known breeding pond and within previously disturbed areas, elevating the roadway by bridging the critical habitat unit, using matting to prevent soil disturbance, avoiding placing stormwater ponds and staging/storage areas within the unit, and adhering to erosion control BMPs. We cannot quantify the number of individuals that may be directly or indirectly affected by the proposed action because of the difficulty in detecting this species either in its larval form or as a subterranean adult. Therefore, take cannot be accurately quantified as the number of individual RFS that are reasonably certain to be injured or killed, or indirectly impacted through habitat degradation. We instead consider take in terms of habitat acreage. Take may occur in the form of physical harm, mortality, or harassment of all life stages within the extent of the 200-foot ROW that crosses Unit RFS-2, Subunit A, or 8.3 acres, as summarized in Table 3 below. The Service concludes that the incidental take of reticulated flatwoods salamander will be considered to be exceeded if new sediment deposition occurs beyond the limits of the 200-ft ROW.

Table 3. The habitat area and associated individuals affected by the proposed project, based on the best available commercial and scientific information.

Species	***Habitat***	***Individuals***	***Take Type***
Gulf sturgeon	2,112 linear feet	*All adult and juvenile sturgeon within the habitat area that may be harmed or harassed by pile driving, construction work activities, and increased turbidity levels. One adult sturgeon may be killed by boat or equipment strikes.*	*Harm, Harass, or Kill*
Reticulated flatwoods salamander	8.3 acres	*All eggs, larvae, post-metamorphic salamanders, and adults within the habitat area that may be harmed, killed, or harassed by construction work activities and degradation of their habitat.*	*Harm, Harass, or Kill*

7.2 Effect Of The Take

In the accompanying biological opinion, the Service determined that this level of anticipated take will not result in jeopardy to the species or destruction or adverse modification of designated critical habitat. Measures to reduce potential impacts to the Gulf sturgeon, reticulated flatwoods salamander, and their critical habitat have been incorporated into the plans for this road construction project.

7.3 Reasonable And Prudent Measures

The Service believes the following reasonable and prudent measures (RPMs) are necessary and appropriate to minimize the incidental take of Gulf sturgeon, reticulated flatwoods salamander, and their critical habitat as a result of constructing the SR 87 Connector Road. Each RPM will be implemented by associated terms and conditions given in the section to follow. FHWA, as the lead federal agency, shall assure that the following reasonable and prudent measures, with their associated terms and conditions are implemented by the FDOT and their contractor.

RPM 1: Gulf sturgeon and reticulated flatwoods salamander protection, and habitat protection and restoration procedures to minimize impacts from all the construction and maintenance activities shall be implemented.

RPM 2: Ensure that the terms and conditions are accomplished and completed as detailed in this incidental take statement including completion of reporting requirements.

7.4 Terms and Conditions

In order to be exempt from the prohibition of section 9 of the Act, FHWA must ensure that the FDOT and their contractors comply with the following terms and conditions, which implement the preceding reasonable and prudent measures. All conservation measures described in the BA and listed above (Section 1.3) are hereby incorporated by reference as terms and conditions within this document pursuant to 50 CFR § 402.14(I) with the addition of the following terms and conditions. All terms and conditions are non-discretionary.

RPM 1

1.1 The FDOT will provide an information package at the Pre-Construction Conference to educate the Contractor on the subject of the listed species, the laws protecting such species, and the civil and criminal penalties for harming, harassing, or killing such species.

1.2 The Contractor will consider and implement where practical innovative, environmentally sensitive construction techniques to avoid/minimize impacts to listed species and sensitive areas.

1.3 *Construction Special Provisions - Gulf Sturgeon Protection Guidelines (September 2012)*

will be implemented during the construction of this project. See Appendix B.

1.4 The Erosion Control Plan/Stormwater Pollution Prevention Plan (SPPP) will be provided to the Service for comment prior to the start of work. Substantive changes to the SPPP during construction will also be reported to the Service.

1.5 The Erosion Control Plan/SPPP will be strictly adhered to, including the installation and maintenance of structures. Temporary erosion control devices will be installed prior to clearing and grubbing activities. Other measures in the plan will include:

1.5.1 All turbidity barriers placed in the river will be consistent with the *Gulf Sturgeon Protection Guidelines*.

1.5.2 Stockpiled materials will be placed in a manner to prevent rain runoff from washing materials into the river.

1.5.3 The Erosion Control Plan will include redundant measures for the width of the ROW along the Blackwater River and along the limits of construction within the flatwoods salamander critical habitat unit to provide a second line of defense should one layer of protection be breached. An example would be a double row of silt fencing.

1.5.4 The Erosion Control Plan will include daily monitoring of erosion control devices that protect the waters of the Blackwater River and the flatwoods salamander critical habitat unit.

1.6 Soil disturbing activities (clearing, pile driving) within the potential breeding pond (Pond 2) of the flatwoods salamander critical habitat unit will be avoided to the extent practicable during periods when eggs/larvae may be present (October through April). Additional coordination will occur during the Design phase to address this issue.

1.7 In the event of erosion control failure with impacts to the Blackwater River, the Contractor will notify the FDOT, FHWA, and Service to determine: (1) whether incidental take was exceeded, (2) if additional protection measures are needed to avoid future impacts to listed species from sedimentation, and (3) if stream restoration is needed. The Service will be available to assist the FDOT with development of a stream restoration plan should it become necessary.

1.8 Survey the baseline stream geomorphology 400 m downstream of the extent of construction through methods including a longitudinal profile and stream channel cross-sections. Coordinate the survey plan with the Service prior to implementation.

1.9 The Stormwater Management Plan with the final locations of stormwater treatment ponds will be provided to the Service for review prior to finalizing the plan. Siting ponds with direct hydrologic connections to Coopers Basin will be avoided to the extent possible. If these locations cannot be fully avoided, the pond design will include measures to reduce

the risk of contaminants being discharged into Coopers Basin and evidence of such will be provided to the Service.

1.10 Stream turbidity will be monitored by the Project Administrator or his designee before construction in various places on the river (upstream, downstream, etc.) to establish a baseline. During construction and demolition, the Project Administrator will be responsible for monitoring turbidity levels daily for any earthwork activities near the Blackwater River to ensure that turbidity levels do not increase above the level allowed by the FDEP permit for an OFW. Construction activities found to be associated with the increased turbidity levels will not be allowed to resume until the turbidity levels return to that of ambient. All other construction activities having no effect on the deviant turbidity levels will be allowed to resume once the source has been identified.

1.11 Boats and barges used in support of construction activities will be removed from the main channel during periods of inactivity.

1.12 A post-construction field review will be conducted by FDOT and the Service to determine if the project has impacted the Blackwater River and if stream restoration is needed.

1.13 No herbicides or pesticides will be used within the flatwoods salamander Critical Habitat Unit RFS-2, Subunit A during construction and post-construction for FDOT maintenance activities.

1.14 The hydrology and native vegetation of the potential breeding pond (Pond 2) within the FDOT ROW will be maintained to the extent practicable. The pond's plant community and hydrology will be monitored for 5 years to better assess the long term adverse effects of the bridge. A monitoring plan will be developed and coordinated with the Service prior to construction. Annual monitoring reports will be provided to the Fish and Wildlife Service's Field Office in Panama City, Florida

1.15 Conservation measures and best management practices outlined in the BA and these terms and condition shall be included as enforceable provisions of the construction contract. Failure to comply with all applicable conservation measures outlined in the BA, unless they conflict with provisions in these terms and conditions, and all terms and conditions included here may invalidate protective coverage of ESA section 7(o)(2) regarding the incidental take of listed species.

RPM 3

3.1 Upon locating a dead, injured, or sick individual of an endangered or threatened species, FDOT will notify the Fish and Wildlife Service Law Enforcement Office, Groveland, Florida at (352) 429-1037 within 24 hours, and the Fish and Wildlife Service's Field Office at Panama City, Florida at (850) 769-0552 within 48 hours. Care should be taken in handling sick or injured individuals and in the preservation of specimens in the best possible state for later analysis of cause of death or injury.

3.2 A report describing the actions taken to implement the terms and conditions of this incidental take statement shall be submitted to the Project Leader, U.S. Fish and Wildlife Service, 1601 Balboa Avenue, Panama City, Florida, 32405, within 60 days of the completion of construction. This report shall include the dates of work, assessment and actions taken to address impacts to the Gulf sturgeon and flatwoods salamander, if they occurred.

8.0 CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to use their authorities to further the purposes of the Act by conducting conservation programs for the benefit of endangered and threatened species. Towards this end, conservation recommendations are discretionary activities that an action agency may undertake to minimize or avoid the adverse effects of a proposed action, help implement recovery plans, or develop information useful for the conservation of listed species.

1. To reduce the risk for secondary population growth around Coopers Basin, and to provide protective measures to this important sturgeon summer holding area, we recommend that opportunities for wetland preservation, restoration, and enhancement be considered that would benefit the basin.

2. The known flatwoods salamander breeding pond within the privately owned critical habitat Unit RFS-2, Subunit A, faces the threat of continued degradation due both to lack of management and the risk of a future land use change to urban development. The risk of development will be heightened by its proximity to the new connector road. When compensating for the loss of RFS habitat (Conservation Measure #27), we recommend that the FDOT give priority consideration to the acquisition (fee simple or by conservation easement) first to this unit, and then to other privately owned critical habitat units.

9.0 REINITIATION NOTICE

This concludes formal consultation on the action(s) outlined in the BA. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information shows that the action may affect listed species in a manner or to an extent not considered in this opinion; (3) the action is subsequently modified in a manner that causes an effect to the listed species not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation. This biological opinion was formulated by evaluating the effects of the action within the next five years. A re-evaluation of this opinion is required after 5 years, and should be coordinated with the Service at the beginning of the ROW phase.

Florida Fish and Wildlife Conservation Commission

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December 13, 2013

Ms. Mary A. Mittiga
U.S. Fish and Wildlife Service
1601 Balboa Avenue
Panama City, Florida 32405
Mary_Mittiga@fws.gov

Re: U.S. Fish and Wildlife Service Draft Biological Opinion, SR 87 New Connector Road, Santa Rosa County, Florida

Dear Ms. Mittiga:

Florida Fish and Wildlife Conservation Commission (FWC) staff has reviewed the U.S. Fish and Wildlife Service's (Service) draft biological opinion (BO), dated November 25, 2013 and provides the following comments in accordance with the Fish and Wildlife Coordination Act for your consideration. This draft BO is for the Federal Highway Administration/Florida Department of Transportation (FDOT) on constructing a new State Road (SR) 87 connector road in Santa Rosa County, Florida.

Proposed Action

The FDOT District 3 proposes to construct a new two-lane (Phase 1) SR 87 connector road from SR 87S at US 90 east of Milton to SR 87N north of Milton in Santa Rosa County, Florida. The new connector is proposed to improve north-south connectivity for hurricane evacuation, enhance movement of freight, and provide additional traffic capacity. The two proposed alternative routes are of similar length (7-8 miles) and cross designated critical habitat for the Gulf sturgeon and reticulated flatwoods salamander (RFS). Construction will occur in two phases. The Phase 1 road will have both a rural undivided typical section with two 12-foot travel lanes, 5-foot outside paved shoulders, and drainage swales, and an urban undivided typical section with two 12-foot travel lanes, 4-foot paved bike lanes, a 12-foot multi-use path, and a curb-and-gutter stormwater collection system. Sufficient right-of-way (up to 264 feet) will be acquired to allow for future road capacity improvements (Phase 2 build-out). A new bridge approximately 5,570 feet in length will be constructed with 180 linear feet across the Blackwater River; build-out will include a second span. The bridge will begin south of the Blackwater River and continue on the north side of the river where it will terminate after crossing RFS critical habitat, the Blackwater Heritage State Trail, and the floodplain of Clear Creek. The Phase 1 bridge typical section will consist of two 12-foot lanes, a 6-foot inside paved shoulder, a 10-foot outside paved shoulder, a 1.5 foot barrier, and a 12-foot multi-use trail.

Comments

Federally listed species addressed in the BO that may be impacted by this project include the Gulf sturgeon (*Acipenser oxyrinchus desotoi* – Federally Threatened) and the reticulated flatwoods salamander (*Ambystoma bishopi* – Federally Endangered). In addition, there are several non-listed species that the Service has been petitioned to list

that could be found in the project area. These include the Escambia map turtle (*Graptemys ernsti*), and two dragonflies: Calvert's emerald (*Somatochlora calverti*) and the yellow-sided clubtail (*Stylurus potulentus*). Two state listed species also occur within the project area and could be affected by the project. These are the blackmouth shiner (*Notropis melanostomus* – State Threatened) and the alligator snapping turtle (*Macrochelys temminckii* – State Species of Special Concern).

The proposed alignment for the SR 87 connector road will cross the Blackwater River upstream of areas that are known to contain the blackmouth shiner. It is likely that this area contains habitat that is suitable for the blackmouth shiner to occur in the vicinity. The blackmouth shiner is highly vulnerable due to its short life span, the ephemeral nature of its habitat, and changes in water quality. FWC conducted a biological status review in 2011, as part of the revisions to the State's Imperiled Species listing process. The Biological Status Review for the blackmouth shiner can be obtained from the following FWC website: http://myfwc.com/media/2273265/Blackmouth-Shiner-BSR.pdf. An FWC background document entitled "Status of the Blackmouth Shiner" is attached for your reference.

The alligator snapping turtle has been reported from the Blackwater River, and may be presumed to be present in the vicinity of the proposed project. FWC conducted a biological status review in 2011, as part of the revisions to the State's Imperiled Species listing process. The Biological Status Review for the alligator snapping turtle can be obtained from the following FWC website: http://myfwc.com/media/2273250/Alligator-Snapping-Turtle-BSR.pdf. An FWC background document entitled "Status of the Alligator Snapping Turtle" is attached for your reference.

FWC staff familiar with the above taxa has reviewed the BO and the measures identified within the BO to avoid and minimize the potential impacts of the proposed project to the federally listed, federally petitioned, and state listed taxa.

FWC staff concurs with the Service's conclusions and biological opinion that the new SR 87 connector road project as proposed is not likely to jeopardize the continued existence of the Gulf sturgeon and reticulated flatwoods salamander and will not destroy or adversely modify their designated critical habitats. With respect to the Gulf sturgeon, we recommend expanding the pile-driving work exclusion dates (Conservation Measure #13, page 11) to also avoid the sturgeon out-migration period (October and November). The conservation measures that FDOT has agreed to, as part of general conditions and specifically for the Gulf sturgeon, and the Terms and Conditions/Conservation Recommendations of the USFWS biological opinion should be adequate to prevent take of the state listed blackmouth shiner. Further, the avoidance and minimization measures identified within the BO should have minimal impact to the state listed alligator snapping turtle.

We recommend that the final BO include a discussion of the federally petitioned Escambia map turtle, Calvert's emerald, and yellow-sided clubtail and identify that state listed species may be present.

If you need further assistance, please do not hesitate to contact Jane Chabre either by phone at (850) 410-5367, or at FWCConservationPlanningServices@MyFWC.com. If

you have specific technical questions regarding the content of this letter, please contact David Cook at 850-921-1021 or by email at david.cook@myfwc.com.

Sincerely,

Bradley J. Gruver

Bradley J. Gruver, Ph.D.
Section Leader
Species Conservation Planning Section
Division of Habitat and Species Conservation

SR 87 New Connector Road response to BO_18398_12132013.docx

Attachments
CC: FDOT, District 3, Chipley, FL (Peggy Kelley)
peggy.kelley@dot.state.fl.us

Status of the Blackmouth Shiner (FWC background document)

Biological Background

Reeve Bailey first collected this small minnow in 1939 in Pond Creek, a tributary of the Blackwater River. Bortone (1989) first described and named the species, with additional information provided by Suttkus and Bailey (1990) and Bortone (1993). The blackmouth shiner (*Notropis melanostomus*) is one of the smallest minnows (up to 38 mm standard length, or nearly 1.5 inches) and is recognized by its sharply upturned mouth. It has large eyes that have a diameter greater than the length of the snout. A dark midline stripe extends forward from the base of the tail to the snout. A lighter side band may border the upper edge of the dark midline band (Bass and Hoehn 2010).

The blackmouth shiner has been collected in isolated locales of the Blackwater River (and its tributary, Pond Creek), the Yellow/Shoal River Basins in Florida; Bay Minnette Creek in Alabama; and the Lower Black Creek, Chickasawhay, and Pascagoula Rivers in Mississippi (Bass et al. 2004, Bortone 1989, Bortone 1993, O'Connell et al. 1998, O'Connell et al. 2005, Suttkus and Bailey 1990).

While the life history and specific habitat requirements of the blackmouth shiner remain poorly understood, Bortone (1989, 1993) presents the most complete information on life history and habitat requirements. In general, the species inhabits quiet backwater areas and oxbow lakes off the main channel having no measureable flow and low pH (Bortone 1993, Gilbert 1992, O'Connell et al. 1998, Suttkus and Bailey 1990). Bortone (1993) indicated that most occurrences were typically within 5.5 meters from shore and associated with pond cypress (*Taxodium ascendens*), Atlantic white cedar (*Chamaecyparis thyoides*), various pine species (*Pinus spp.*), and sweet gums (*Liquidambar styraciflua*). Aquatic vegetation in inhabited areas typically included bogmoss (*Mayaca sp.*), pondweed (*Potamogeton sp.*), and bladderwort (*Utricularia sp.*). Bortone (1993) also indicated that abundance was not well correlated with water depth or most water quality (WQ) parameters of his study. Most schools observed in Bortone's study (1993) contained between 50 and 4,800 individuals, and were found at depths between 0.1 m and 0.8 m. Spawning may occur in 2 pulses: May and June and again in late summer.

Conservation History

The blackmouth shiner was listed by the Florida Game and Fresh Water Fish Commission (predecessor to the FWC) as Threatened in 1979, and then reclassified to Endangered in 1986. Several management plans have been developed for the Blackwater, Yellow and Shoal Rivers Basins. These include the Blackwater River Watershed Stewardship Plan (Blair et al. 2010), the Gulf Coastal Plain Ecosystem Partnership's Aquatic Management Plan for the Watershed of the Western Panhandle of Florida and Southern Alabama (TNC 2006) and the Blackwater River State Forest Management Plan (Department of Agriculture and Consumer Services, Florida Forest Service 2005). These plans contain recommendations for habitat management and restoration activities within the basins. While these plans were not designed for specific conservation and management of the blackmouth shiner, they contain strategies and recommendations that support the conservation needs for the species. Some of these plans have

received some funding for implementation, but additional funding and cooperation with state and local governments is needed.

Five sub-watersheds are considered high priorities for maintaining populations that are currently present or have persisted in these sub-watersheds over time. The city of Milton is within the Blackwater River/Pond Creek priority sub-watershed and the city of Crestview is in one of the Shoal River priority sub-watersheds. The Blackwater River State Forest and State Park comprise nearly all of the priority Blackwater River sub-watersheds. Approximately 14.6% of the total acreage within these five priority sub-watersheds is currently under public or conservation ownership. While the major conservation lands are within the Blackwater River State Forest and State Park, important areas near the city of Milton are part of the Blackwater River Water Management Areas. The 381 acres of the Blackwater River Water Management Areas are adjacent to a primary population center for the blackmouth shiner. There is approximately 180 acres within a Florida Department of Environmental Protection conservation easement on the southside of Pond Creek.

Threats and Recommended Listing Status

In 2010, the Florida Fish and Wildlife Conservation Commission (FWC) directed staff to evaluate the status of all species listed as Threatened or Species of Special Concern that had not undergone a status review in the past decade. To address this charge, staff conducted a literature review and solicited information from the public on the status of the blackmouth shiner,. The FWC convened a biological review group (BRG) of experts on the blackmouth shiner to assess the biological status of the species using criteria specified in Rule 68A-27.001, F.A.C. This rule includes a requirement for BRGs to follow the Guidelines for Application of the International Union for Conservation of Nature (IUCN) Red List Criteria at Regional Levels (Version 3.0) and Guidelines for Using the IUCN Red List Categories and Criteria (Version 8.1). FWC staff developed an initial draft Biological Status Review report (BSR), which included the BRG's findings and a preliminary listing recommendation from staff. The draft was sent out for peer review, and the reviewers' input was incorporated into a final report.

The Imperiled Fishes Survey Investigations collected the blackmouth shiner at 21 sites in only 2 major Florida river drainages (Bass et al. 2004). These 21 sites represent sampling from 5-6 locations as defined for the listing evaluation by IUCN. Primary threats to this species include changes in water quality and quantity, river impoundments for water supply, channel dredging, habitat alteration, encroachment of urbanization, and point source and non-point source pollution.

Based on the literature review, information received from the public, the BRG findings, and peer-review input, FWC staff recommended the blackmouth shiner be retained on the list of State-designated Threatened Species.

The BRG found the blackmouth shiner met the following criteria for listing as Threatened: Criterion (B) Geographic Range. Extent and Area of occupancy less than 2,000 km 2 (772 mi2), severely fragmented or exist in $\leq$ 10 locations, and extreme fluctuations in number of mature individuals.

It is possible the bluenose shiner area of occupancy in FL has always been <2,000km2. As such, conservation actions should focus on overcoming the triggered subcriteria by reducing the fragmentation or existence in greater than 10 locations, or by reducing extreme fluctuation.

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Status of the Alligator Snapping Turtle (FWC background document)

Biological Background

The alligator snapping turtle (*Macrochelys temminckii*) is the largest freshwater turtle in the New World (Enge et al. 2013), with males reaching 75 kg (165 lbs) or more; females weigh less than half this, often weighing below 25 kg (55 lbs) (Ewert et al. 2006). The head is massive, with a hooked beak, and the brown carapace (upper shell) bears 3 longitudinal ridges that are especially pronounced in younger individuals. The plastron (lower shell) is relatively small and cross shaped. With their large heads and long tails, hatchlings resemble miniature versions of adults. All life stages have a unique worm-like appendage on the floor of the mouth; this is used as a lure to attract prey. The mouth lining is camouflaged or mottled, in contrast to the pink mouth lining of the common snapping turtle (*Chelydra serpentina*).

The species' range centers on the lower Mississippi River and extends westward to Texas, northward to Illinois, and eastward to Florida. In Florida, it occurs in Gulf coastal rivers throughout the Panhandle from the Escambia River eastward to the Suwannee River system. (Ewert et al. 2006, Krysko et al. 2011). There are records of alligator snapping turtles from Eureka and the Ocklawaha River in Marion County that may have been the result of introductions from the Ross Allen's Reptile Institute at Silver Springs (Krysko et al. 2011). There are 2 sightings reported from the Wacissa River (Pritchard 1989), but recent trapping efforts have failed to confirm the presence of alligator snapping turtles in this river (P. Moler, Florida Fish and Wildlife Conservation Commission [FWC], personal communication). There are genetic data that indicate alligator snapping turtle populations in the Suwannee River drainage are distinct from other populations (Roman et al. 1999). This is supported by morphological data (T. Thomas, FWC, personal communication).

In Florida, alligator snapping turtles are restricted to rivers, streams, and associated permanent freshwater habitats, including impoundments. Food items include fish, turtles, snakes, birds, mollusks, and other aquatic organisms, with some vegetation, including nuts and fruits (Elsey 2006). Females lay a single clutch of 17 to 52 eggs per year; nesting typically occurs from late April to mid-May along river berms, high banks, and artificial spoil mounds (Ewert and Jackson 1994). Young emerge from nests in August and September. Additional life history information is available in Ewert et al. (2006), Pritchard (2006), and Ernst and Lovich (2009).

Conservation History

Because of past threats and probable declines, principally from harvest for food, the FWC enacted a series of protective measures for alligator snapping turtles in the past 4 decades. Chronologically, the most significant were limiting possession to 1 animal in 1974 and listing the alligator snapping turtle as a Species of Special Concern in 1985. In 2009, FWC prohibited all take and possession of the species. Take of the common snapping turtle was prohibited at the same time because of its similarity of appearance to alligator snapping turtles. To facilitate compliance with the prohibition of take from the wild, pet owners who possessed alligator snapping turtles before 20 July 2009 were required to obtain a Class III Personal Pet Permit to keep those turtles; the permit limits possession to 1 alligator snapping turtle. More information

on permits can be found on the FWC's website for possession of turtles. (Note: Use of "take" in this paragraph is as defined in Rule 68A-1.004(79), Florida Administrative Code [F.A.C.]) Because most naturally occurring alligator snapping turtle populations in Florida inhabit river systems that drain from Alabama and Georgia, protective measures in those 2 states are significant to Florida populations. The State of Georgia lists the alligator snapping turtle as Threatened, with no take except by permit, under its Endangered Wildlife Act of 1973 (391-4-10-.08). Although it does not have an Endangered species law, the State of Alabama lists the alligator snapping turtle as a nongame species with no allowable take except by special permit (Alabama Department of Conservation and Natural Resources, Nongame Species Regulation 220-2-.92).

Although not directed solely toward the species, conservation of alligator snapping turtles in Florida has been enhanced greatly by decades of extensive effort to conserve lands within its range. As a result, state, local, and federal agencies, as well as private organizations, have acquired much of the land bordering rivers inhabited by the species (see Habitat Conservation and Management). There are also numerous regulations in Florida that protect this state's waters, although threats to water quality and quantity remain. State and local regulations addressing water quality of Alabama and Georgia streams and rivers likewise are important for protecting habitat of alligator snapping turtles downstream in Florida.

Threats and Recommended Listing Status

Principal threats to the alligator snapping turtle previously included deliberate human take (as defined in Rule 68A-1.004(79), F.A.C.; now unlawful), incidental take with fishing gear (trotlines, bush hooks), pollution, riverine habitat alteration (channel dredging, snag removal, siltation, impoundment), and nest predation.

In 2010, FWC directed staff to review the status of all state-listed species that had not undergone a status review in the past decade. To address this charge, staff conducted a literature review and solicited information from the public on the status of the species. The FWC convened a Biological Review Group (BRG) of experts on the alligator snapping turtle to assess the biological status of the species using criteria specified in Rule 68A-27.001, F.A.C. This rule includes a requirement for BRGs to follow Guidelines for Application of the International Union for the Conservation of Nature (IUCN) Red List Criteria at Regional Levels (Version 3.0) and Guidelines for Using the IUCN Red List Categories and Criteria (Version 8.1). Staff from FWC drafted a Biological Status Review Report (BSR), which included the BRG's findings and a listing recommendation from staff. The draft was sent out for peer review, and the reviewers' input was incorporated into a final report, which was approved by the Commissioners (FWC 2011).

The BRG found that the alligator snapping turtle met the following criterion for listing:

- Criterion B, Geographic Range: Area of occupancy less than 2,000 km2 (772 mi2); severely fragmented because of limited genetic exchange between populations in separate rivers; and continuing decline inferred or suspected in area, extent, or quality of habitat.

After the review was conducted, FWC staff further considered the concept of "severely fragmented" and concluded that it does not apply to the alligator snapping turtle because the isolation of populations by drainage is natural and some genetic exchange likely occurs. The Regional Assessment of the BSR also noted the possibility of population rescue by turtles outside of Florida should a catastrophic event eliminate any Florida populations of alligator snapping turtles; the listing guidelines allow for altering the initial listing finding to a less imperiled status in such situations.

Based on the literature review, information received from the public, the BRG findings, staff's evaluation of the findings, and peer reviewer input of the staff-modified findings, the FWC recommends that the species not be listed as Threatened and that it be removed from the Florida Endangered and Threatened Species List.

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